

ON THE  
SUBCUTANEOUS INJECTION  
OF  
MORPHIA IN INSANITY.

BY

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THE cases which one generally meets in an asylum often differ in no small degree from those of ordinary practice. To ensure sleep in a patient under delirium tremens, or other such short-lived malady, is to establish cure at once, and the result melts into the satisfactory finish of "cured in a few days thereafter." Fortunately or unfortunately, such bright prospects are not often held out to asylum practitioners, but yet the efficient means for procuring sleep are frequently not less clamant. In many of our cases there is no hope of recovery, even although sleep of the soundest nature was obtained; nevertheless, it is no mean aim to command such for one who, during a paroxysm, passes night after night in a morbid condition, whether wildly shouting and beating at the walls and doors he disturb the rest of all, and prostrate himself, or with a quieter demeanour remain in bed with unclosed lids in melancholy whispering. The boon conferred on the household in the former, and on the patients in both cases, is sufficiently obvious; and it is for such chronic, not less than the acute cases, that I would recommend the subcutaneous injection. We cannot, indeed, say in such cases that the patient went out cured shortly after, for that they may never do; but the comfort and advantage resulting from their successful narcotism must be familiar to all in our

department. Of acute cases I need say little ; in them the state of matters is conspicuous enough.

Most of the following cases were chronic and incurable, only two being recent and curable, viz., one of acute mania, and one of monomania of suspicion.

In these experiments, the apparatus used was the handsome little graduated glass syringe of Dr. Alexander Wood ; the needles, though made of steel, offer no inconvenience. Two solutions were employed viz., common Sol. Morph. Muriat. of the shops, and the solution mentioned by Dr. C. Hunter, in the 'Medical Times and Gazette' for 1859, p. 310, &c. Mine only differed in having double the quantity of water.

B. Morph. Acet., grs. x ;  
Acid. Acet. Fort., q. s. ;  
Aq. Distill., 3ij.

The acid was also neutralized by Liq. Potassæ.

Having a high opinion of the efficacy of the injection method from many experiments on the lower animals, I determined, if possible, to apply it to some exceedingly troublesome and obstinate cases under my charge, with the sanction of our physician, Dr. Lauder Lindsay.

I shall detail them in the order in which they occurred, mentioning the results noted on the occasion.

The first case was that of a female of the strumo-arthritis diathesis, æt. 51, suffering from monomania of fear and suspicion ; had been insane for six or seven months. She was in a state of extreme restlessness by day, wandering about the airing-court moaning loudly, heedlessly coming in contact with her fellow-patients, and stripping off her shoes and stockings. She asserted that the devil was in me, and that I must not look at her. In mingled terror and defiance she dared the attendants, and wrestled with them on all opportunities, bruising her hands with her reckless tossing and violence. Night came only to aggravate her distress, ushered in by the usual struggle in undressing. She knocked at the door, tossed about bed and bedding, was filthy, and disturbed every one within hearing. In this condition, ordinary opiates of 3ij to 3iiss Tinct. Opii, and a like dose of cannabis, morphia, hyoscyamus, and solid opium, were utterly impotent as sedatives.

On the 30th April I injected  $\text{m}\text{v}\text{x}$  of Sol. Morph. Muriat. into the cellular tissue on the inner side of the left arm. No case could have been more troublesome, though it was certainly much easier than the giving of the ordinary opiate ; she struggled, wriggled, and shrank in horror from me, but calmed a little when she found the attendants quite sufficient. Plunging the needle through the tense skin, and pushing it a little way beneath in a horizontal direction (as

is generally done), the fluid was poured in. A narrow strip of plaster secured the puncture, and the affair was over in as little time as one might take to read the description. She soon became quiet, and slept a good deal during the night, though she did not leave off the knocking altogether. On the following day she was also somewhat quieter. Next night  $\text{m}_{\text{viiij}}$  of the same solution were injected into the other arm; she seemed stupid for an hour or two, but afterwards became restless, jumping out of bed and rattling at the shutter for some hours. The strength of the dose was evidently inadequate.

On the 1st of May, she had  $\text{m}_{\text{vijj}}$  (less than two thirds of a grain) of the above-mentioned solution of acetate of morphia injected similarly at 8 p.m.; she voluntarily gave me her arm for the injection, and dozed in ten minutes after. Sleep continued till morning; the first sound rest she had enjoyed for many a night. Next day she engaged in a little gallery-work, and promised to continue her good behaviour.

At the same hour on the nights of the 2nd, 3rd, 4th, and 5th, she had similar treatment, the dose being increased to  $\text{m}_{\text{ix}}$  and  $\text{m}_{\text{x}}$  successively. She slept soundly, became much more tranquil during the day, less tremulously suspicious, and assisted in the gallery and sewing-room. She feels languid and sleepy in the morning, but afterwards becomes quite cheerful.

From the 6th to the 11th the injection was repeated nightly, with the best results. She is of opinion that the sleep she gets now makes her quite another person; busily employed in the sewing-room, and takes care of some of her neighbours.

11th. At 8 p.m. the dose (now increased to  $\text{m}_{\text{xv}}$ , or  $1\frac{1}{4}$  gr.) was injected under the skin in front of the clavicle. She did not sleep well, and next day was restless and excited, with hair dishevelled, shrinking and muttering. I now gave her  $\text{z}_{\text{iss}}$  of Sol. Morph. Muriat. by the mouth, as an opiate, in the evening, and she slept well, continuing to do so under like treatment for many nights.

Though this chronic case is still with us, the above may be taken as a fair estimate of some of the benefits accruing from this method.

**CASE 2.**—A male, of well-marked strumous diathesis, æt. 38, a rapid case of general paralysis; had been ill for two or three months at home. He had the wild delusions of wealth and magnificence, so characteristic of this disorder. During the day he walked round and round the airing-court in a restless and stupid condition, scarcely stopping when addressed. At night I generally found him bathed in perspiration, tossing the bedclothes about the room, and annoying his neighbours by getting into their beds and rapping at the window. His strength was evidently breaking, and sleep became imperative.

On the 1st of May I injected  $\text{m}_{\text{vijj}}$  of the usual solution into his

arm ; in an hour and a half he slept soundly, and continued to do so till the ordinary time for rising (6 a.m.). The same treatment on the evenings of the 2nd and 3rd ( $\text{m}^{\text{ix}}$ ) proved equally beneficial.

4th and 5th.—Injection of  $\text{m}^{\text{x}}$  (about 1 gr.) each evening. He was rather restless, though not so bad as previously.

6th.—Had  $3\text{ij}$  Tinct. Opii, which only increased the restlessness, for he clambered on the window, cut his lip by a severe fall, and next day was very excited. He stood in the airing-court slapping his hands on his thighs, and swinging his arms, till his trousers and hands were covered with blood.

7th and 8th.—Much quieter under the subcutaneous injection of  $\text{m}^{\text{xiiij}}$  ; strength failing.

9th.—Slept well with  $\text{m}^{\text{xiv}}$ . I did not proceed with the treatment further, as he was rapidly sinking. He died on the 11th.

CASE 3.—A female of the bilio-arthritic diathesis, æt. 32 ; a case of acute mania. This was a very troublesome person, with a ready and abusive tongue, and a forward and imperious manner. She annoyed and distracted the attendants in charge during the day, and railed at all who interfered with her whims. But the day was nothing to the night ; she sang, shouted, and otherwise broke the rest of those in her vicinity, defying all available opiates, which she swallowed with morbid avidity, but without any improvement.

May 1st.—She had  $\text{m}^{\text{vij}}$  of the ordinary solution (M♂. A.) injected beneath the cellular tissue of her arm, which she voluntarily presented, scoffing meanwhile at the insignificance of the operation. Passed a noisy night.

2nd.—Slept pretty well after  $\text{m}^{\text{x}}$ . She felt better ; but tried to save her former assertion, by stating that she slept of her own accord.

3rd.—Had  $\text{m}^{\text{x}}$  ; slept soundly. A marked change is now evident during the day ; she is much less forward and ill-tempered.

For several successive nights after this, however, she was rather noisy ; but her demeanour during the day was quite satisfactory.

11th.—I gave  $3\text{ss}$  of the solution of the muriate of morphia of the shops, which acted admirably. She began to work in the sewing-room next day.

14th.—After an injection of  $\text{m}^{\text{xvj}}$ , rather noisy during the earlier part of the night, quieter towards morning.

In a night or two she began to sleep well enough without opiates, assisted daily in gallery-work, and conducted herself with quietness and amiability.

The most remarkable feature in this case was the beneficial change which resulted in the conduct of the patient during the day succeeding the administration of the opiate by injection, and this condition was not altered in any material degree by the failure of the drug to produce sleep. Her behaviour was uniformly more subdued till her recovery and dismissal.

CASE 4.—A hysterical female of the neuro-bilious diathesis, æt. 31; affected with monomania of suspicion. She used to scream or shout at the top of her voice, and annoy every one, or else by her giggling and laughing disturb the rest of her companions in the dormitory. For several nights she had been very troublesome, and being somewhat idiosyncratic with opiates by the mouth, I tried this method, injecting  $\text{m}_{\text{XV}}$  Sol. Morph. Muriat. of the shops beneath the skin of her arm. Her sleep was interrupted, and next morning complaining of sickness and langour, she kept her bed. She was much quieter for a day or two, either from the sedative effect of the morphia directly, or from the secondary influence of the drug through depressing sickness. The same effects were produced on repetition, and with the other solution.

CASE 5.—An arthritic female, æt. 57; suicidal melancholia. This patient was subject to paroxysmal excitement, lasting for three or four days; in her usual state she was industrious and orderly. At this time, she had been exceedingly restless and troublesome at night, and her habits filthy and degraded. For two nights I injected  $\text{m}_{\text{VII}}$  of the acetate of morphia solution, with marked improvement, both in regard to her quietude and cleanliness. In this case the narcotic was sufficient to keep her in a moderate condition till her usual state returned, when such treatment was no longer necessary.

CASE 6.—Chronic mania; a male, æt. 27, of the bilio-arthritic diathesis. This also was a paroxysmal attack, and the average duration of previous ones had been about two days. He was a strong, powerful man, of a furious and most dangerous disposition. He had just torn a canvas dress to fragments, and was meditating further mischief. In the forenoon of the first day, I injected  $\text{m}_{\text{XIV}}$  of the usual solution into the cellular tissue of his arm, not indeed with intent to procure sleep, but trusting that it would exercise its sedative influence on him in his temporary fit. I was not disappointed, for in an hour he calmed, and was so much better in the afternoon that he attended pump-work as usual.

CASE 7.—Chronic mania; female, æt. 64, arthritic diathesis. She was a most noisy person at all times, thundering about forms and chairs, striking tables, shouting, swearing, and using most obscene language. She was also frequently troublesome at night. On one of these occasions, when she had begun her operations for the evening, intent upon terminating the rest of all around, I injected  $\text{m}_{\text{XII}}$  into the arm. She continued her noise for some hours, but afterwards quieted. Next morning, however, she was sick and vomiting, and behaved much more quietly for that day. On another evening,  $\text{m}_{\text{XIV}}$  kept her perfectly tranquil, the slumber lasting till seven next morning.

CASE 8.—Monomania of suspicion; a female of strumous diathesis, æt. 34. During the day, she was quiet and distrustful;

but at night became much excited, getting out of bed and asserting that people were about to murder her mother, and shouting to get out. I injected  $\text{mviij}$  into her arm, and she had an excellent night; complaining, however, on the following morning, of headache. Next night she continued restless and sleepless under similar treatment. Seeing the distress which she experienced from the loss of her night's rest, I on the following evening, at eight p.m., injected  $\text{mxiij}$  into the cellular tissue of her arm. Enjoining that more than usual attention be paid to her, and that she be visited frequently, since she looked like one predisposed to vascular disease, I retired. On visiting her again in an hour and a half, the attendant in charge reported her all right. Certainly she seemed quiet enough; but bringing the candle over her face, I found her completely collapsed, lips blue, features cadaveric, eyelids drooping, and pupils much contracted, while her pulse seemed fleeting. She was quite insensible, and her muscular system completely prostrate. Respiration could scarcely be detected. Cold water was immediately dashed on her face and repeated; this brought about some faint moans; vigorous stimulation of various kinds was at once put into requisition, and, recovering a little, she was supported and walked about. Both pupils continued much contracted, and drowsiness was excessive, the lower jaw hanging, and the head tumbling forwards on the chest. Cold water was injected into her ears and over her face; her limbs were put into hot water and mustard; vapour of ammonia, toddy, and rapid walking were all duly persevered with. She threatened to succumb every moment, and only by loud and constant talking, conjoined with the other means, was she kept from dozing off. Dr. Lauder Lindsay now saw her, and he added galvanism, *Spiritus Ammon.* *Aromat.*, and the cold douche to the thorax and abdomen. For a moment she would reply rationally, but almost immediately sank into a drowsy and insensible condition.

On examining her chest an hour or two afterwards (1.10 a.m.) we heard a loud bellows-sound (*bruit de soufflet*) with the systole of the heart. The peculiar lividity of the lips, nose, and cheeks, the intermittent pulse, and her general bearing under treatment, no doubt indicated a serious affection of the central organs of the circulation; but was this the effect of organic disease, or the influence of narcotism on the pneumogastric? The restorative measures were cautiously adapted to the latter supposition.

Whenever she was free from excitants, she became collapsed, her lips livid, and heart and pulse gave marked tokens of intermittent action. On rousing her, these disappeared to a great extent. By unremitting attention all night she was kept from falling into the comatose condition. Her feet and hands were bathed, now and then, in warm water. Her tongue was dry, and thirst excessive; she drank coffee in cupfuls. Towards morning she became more lively,

though complaining of beating and pain at the cardiac region. The countenance remained somewhat livid ; eyes drowsy and half closed. Being constantly watched for a day or two, she gradually emerged from this troublesome condition.

With such heroic results, it need not be wondered at if the subcutaneous treatment in this case was not persevered with. She felt weak and faintish for some days, and was apt to become drowsy, complaining of pain and palpitation when she reclined on the left side. She could scarcely bear touching on the chest. Cardiac dulness somewhat increased ; the murmur disappeared before the second day.

Whether owing to this treatment or not, her mental improvement dated from the above occasion, and only once, within a few days of the occurrence, did she evince any of her former delusions. She shortly afterwards became a steady worker, and is now quite recovered.

CASE 9.—Suicidal Melancholia ; female, æt. 44, of the bilio-strumous diathesis. The subcutaneous injection of  $\text{m}_x$ , alternating with other opiates, was of great service. She was always much quieter on the days succeeding such treatment than after the ordinary opiates.

CASE 10.—A female, æt. 69, of the arthritic diathesis ; chronic mania. She has paroxysms of intense excitement, in which she is noisy and destructive, picking and tearing the bedclothes to pieces, and bruising herself by knocking against the walls. Under such circumstances,  $\text{m}_x$  of the usual solution of the acetate procured sound sleep on the three occasions on which it was tried.

CASE 11.—Melancholia ; female, æt. 38, strumous. Being in a state of the greatest trepidation, weeping, and knocking at the door of her bedroom, to the annoyance of her neighbours ; and ordinary opiates being ineffectual or contra-indicated, I injected  $\text{m}_x$  of the solution of the acetate into her shoulder. An excellent night resulted ; but in the morning she vomited a good deal, and complained of languor and heaviness. She was quite composed and subdued all day, engaging in her ordinary duties, and requiring no further treatment during the paroxysm.

From what I have seen of the above treatment, I would advocate its restricted use in every asylum, as one of our most effective opiates—a sedative to the furious, a calmative to the depressed and despairing ; and, moreover, I should apply it to cases where restlessness, excitement, and dirty habits occur at paroxysmal periods. Many other drugs than opiates might thus be introduced into the system of the patient with ease and rapidity. The advantages which this method has over opium and morphia administered by the mouth are evident ; for seldom did I ever find cannabis or hyoscyamus particularly beneficial. Caution may suggest that it be not used in the

first instance, it is true ; but after the failure of the ordinary opiates, or their contra-indication, it should certainly be the duty of the physician to administer it. If, having succeeded at first, it afterwards does not act so well, either from too frequent repetition or idiosyncrasy, an opiate by the mouth will often prove beneficial. Idiosyncratic cases doubtless will occur in this as in all other remedies, but should only increase the caution used in applying it, not in abrogating its use. It is likewise found of especial benefit in cases where a course of laxative medicines is necessary ; a condition so common in asylums, and frequently no less distressing than obstinate. I have heard of no fatal issue resulting from the treatment, nor would such invalidate the above remarks.

With regard to the operation itself, even in the most violent cases there is little difficulty in performing it ; indeed, there is often much less trouble than with the ordinary opiates. In terrified ones the simplicity of the operation reassures them, and by-and-by they give their arms voluntarily. In the demented, no notice is taken of the proceeding.

In no case was there any inconvenience attending the puncture, although sometimes a slightly brownish circle marked the injected portion for a day or two.